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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,686

12/02/2003

Joseph M. Jacobson

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EXAMINER

ZIMMERMAN, JOSHUA D

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/725,686	Applicant(s) JACOBSON ET AL.	
	Examiner JOSHUA D. ZIMMERMAN	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 10-22 is/are pending in the application.
- 4a) Of the above claim(s) 4,10 and 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 06/15/09 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 2003/0017424) in view of Kendale et al. (US 2003/0213382).

Regarding claim 1, Park et al. teach "a method for bringing first and second surfaces into contact (figure 4) for contact printing, comprising the steps of:

bowing a flexible first surface in a controlled manner (paragraph 27);

moving the bowed first surface toward the second surface at a predetermined rate until the first surface contacts the second surface at a single point of contact (paragraph 27. Examiner notes that in order to bring the two surfaces into contact, a

rate must be predetermined, and therefore is inherent); and

continuing to move the bowed first surface toward the second surface, under controlled pressure (the 'down arrows' in Figure 4; paragraph 27, lines 5-6; paragraph 25, lines 7-13), by the step of pushing air ahead of a moving contact line between the first and second surface (paragraph 27, lines 5-9. By virtue of the arrangement shown in Figure 4, and since bubbles are not allowed to form, therefore, inherently, air must be pushed ahead of a moving contact line) until the single point of contact expands to a circle of desired radius (paragraph 27)."

Park et al. further teach that any conventional method may be used to slightly bow the imprint surface (penultimate sentence of paragraph 27); however, Park et al. fail to specifically teach that the flexible surface is bowed "by application of a controlled air pressure difference between the two sides of the first surface."

However, Kendale et al. teach that, at the time of the invention, it was conventional to bend a microcontact printing stamp before contacting the stamp with the target surface by using a user-controlled pressure difference between the top and bottom surfaces of the stamp (paragraph 7).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the conventional method disclosed by Kendale et al. in the method of Park et al. in order to bend the flexible surface because Park et al. teach using any conventional method.

Regarding claim 2, Park et al. teach “further comprising the step of aligning the first surface and the second surface before bringing them into contact (paragraph 25).”

4. Claims 5-7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. and Kendale et al., further in view of Johnson (US 2003/0095170).

Regarding claim 5, Park et al. teach “a method for contact printing, comprising the steps of:

applying a thin film of material to a substrate (paragraph 23);

creating a pattern in the thin film of material by bringing a flexible stamp into contact with the substrate (figure 4), but the steps of:

bowing the stamp in a controlled manner (paragraph 27);

moving the bowed stamp toward the second surface at a predetermined rate until the first surface contacts the second surface at a single point of contact (paragraph 27. Examiner notes that in order to bring the two surfaces into contact, a rate must be predetermined, and therefore is inherent); and

continuing to move the bowed first surface toward the second surface, under controlled pressure (the ‘down arrows’ in Figure 4; paragraph 27, lines 5-6; paragraph 25, lines 7-13), by the step of pushing air ahead of a moving contact line between the first and second surface (paragraph 27, lines 5-9. By virtue of the arrangement shown in Figure 4, and since bubbles are not allowed to form, therefore, inherently, air must be pushed ahead of a moving contact line) until the single point of contact expands to a circle of desired radius (paragraph 27).”

Park et al. further teach that any conventional method may be used to slightly bow the imprint surface (penultimate sentence of paragraph 27); however, Park et al. fail to specifically teach that the flexible surface is bowed “by application of a controlled air pressure difference between the two sides of the first surface.”

However, Kendale et al. teach that, at the time of the invention, it was conventional to bend a microcontact printing stamp before contacting the stamp with the target surface by using a user-controlled pressure difference between the top and bottom surfaces of the stamp (paragraph 7).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the conventional method disclosed by Kendale et al. in the method of Park et al. in order to bend the flexible surface because Park et al. teach using any conventional method.

Park et al. also fail to teach that the substrate is an offset substrate and that the patterned film is transferred “to a final substrate by bringing the offset substrate into contact with the final substrate.”

Johnson teaches a method of transferring a pattern to a final substrate by using an intermediate transfer member (abstract) in order to decrease the amount of fluid transferred to the final substrate (abstract). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to modify the method of Park et al. by including a transfer member in order to reduce the amount of fluid transferred to the final substrate.

5. Regarding claim 6, Park et al. as modified teach all that is claimed, including the addition of a release agent in order to facilitate removal of the mold (paragraph 24). However, Park et al. as modified fail to specifically mention the values of the contact angles of the surfaces in question. However, one having ordinary skill in the art would recognize that utilizing surfaces with different contact angles will facilitate pattern transfer and would have been motivated to modify Park et al. such that “the stamp has a contact angle lower than the contact angle of the offset substrate and the final substrate has a contact angle lower than the contact angle of the offset substrate” in order to facilitate the pattern transfer process.

Regarding claim 7, Johnson further teaches “the step of bringing the offset substrate into contact with a second final substrate to transfer any remaining material to the second final substrate (paragraph 32. The step of cleaning meets this limitation).”

Regarding claim 11, Park et al. as modified teach all that is claimed, but fail to specifically teach “further comprising the step of reversing the patterned film by transferring the patterned film to a second offset substrate before transferring it to the final offset substrate by bringing the offset substrate into contact with the second offset substrate.” However, since Johnson teaches the use of an intermediate substrate in order to transfer a pattern whereby less material is ultimately transferred, one having ordinary skill in the art would have been motivated to include a further intermediate substrate in order to transfer even less material to the final substrate.

Regarding claim 12, Park et al. as modified further teach "further comprising the step of heating the material before or while applying it to the offset substrate (paragraph 29)."

Regarding claim 13, Park et al. as modified further teach "further comprising the step of heating the patterned film before or during the step of transferring (paragraph 29)."

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al., Kendale et al. and Johnson, as applied to claim 5 above, further in view of Jacobson et al. (US 6517995).

Regarding claim 14, Park et al. as modified teach all that is claimed, except "the step of modifying the patterned film before the step of transferring." Jacobson et al. teach further modifying the patterned film in order to create a desired three-dimensional configuration (column 6, lines 43-47). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to further modify the method of Park et al. in accordance with Jacobson et al. in order to create a desired three-dimensional configuration.

7. Regarding claim 15, Jacobson et al. further teach “wherein the step of modifying includes adding material to the patterned film (column 6, lines 43-47).”

Response to Arguments

8. Applicants’ arguments filed 06/15/09 have been fully considered but they are moot in view of the new grounds of rejection.

Applicants’ arguments against Kaylor et al. are moot because Kaylor et al. are not relied upon in the rejection; rather, Kaylor et al. are relied upon only for supporting the previous assertion by the Examiner that it was known in the art that using surfaces with different contact angles will facilitate pattern transfer. See the rejection of claim 6, repeated above. This assertion is clearly supported by paragraph 43 of Kaylor et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA D. ZIMMERMAN whose telephone number is (571)272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2854

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

/Joshua D Zimmerman/
Examiner, Art Unit 2854